US007240358B2

US 7,240,358 B2

(12) **United States Patent**
Horn et al.

(10) **Patent No.:** US 7,240,358 B2
(45) **Date of Patent:** *Jul. 3, 2007

(54) **METHODS AND APPARATUS FOR SCHEDULING, SERVING, RECEIVING MEDIA-ON DEMAND FOR CLIENTS, SERVERS ARRANGED ACCORDING TO CONSTRAINTS ON RESOURCES**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 962 days.

This patent is subject to a terminal disclaimer.

(21) Appl. No.: **09/768,843**

(22) Filed: **Jan. 23, 2001**

(65) **Prior Publication Data**

US 2002/0107968 A1 Aug. 8, 2002

Related U.S. Application Data

(60) Provisional application No. 60/254,514, filed on Dec. 8, 2000.

(51) **Int. Cl.**
H04N 7/173 (2006.01)

(52) **U.S. Cl.** **725/87**; 725/90; 725/91; 725/114; 709/203; 709/231; 341/50; 341/55

(58) **Field of Classification Search** 725/87, 725/90–93, 95, 97–98, 143–148, 114–118, 725/131, 151; 341/50, 55, 60, 51; 709/230–232, 709/225, 203, 223; 714/15, 785
See application file for complete search history.

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(57) **ABSTRACT**

A media object is scheduled for transmission between a server and a client. The media object is partitioned into segments of blocks, wherein each block is a unit of media for which a client will wait to receive an entire block before playing out the block, and wherein each segment includes an integer number of blocks. One or more channels on which to serve each segment are determined, and a rate at which to serve each segment is determined. Additionally, a schedule pair for each channel is determined. The schedule pair includes a time at which the client may start receiving on the channel and a time at which the client may stop receiving on the channel.

94 Claims, 18 Drawing Sheets